UNIVERSITY OF UTAH
HEALTH SCIENCES

ELECTRONIC INFORMATION EXCHANGE BETWEEN EMERGENCY DEPARTMENTS AND POISON CONTROL CENTERS: CONSENSUS OPINION ON ISSUES, OPPORTUNITIES, AND BARRIERS

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INTRODUCTION

Poison control centers (PCCs) rely heavily on verbal communication. This creates substantial risks:

- Data loss
- Delays in time to treatment
- Medical error

Emergency department (ED) care providers manage heavy communication loads with frequent interruption.[1, 2]

Electronic information exchange (EIE) between PCCs and EDs has the potential to reduce medical error, reduce time to treatment, and improve continuity of care for poisonings.

Many health information exchange initiatives fail due to unanticipated barriers.[3]

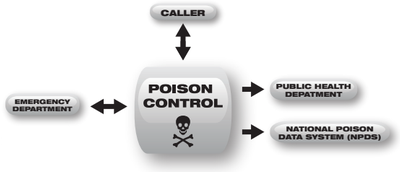

Figure 1. Poison control center information exchange

OBJECTIVE: To identify the clinical, operational, and legal considerations important for electronic information exchange (EIE) between EDs and PCCs.

What is electronic information exchange?

Sending information about an individual patient's poison exposure electronically, between a poison control center and an emergency department, in a format that is usable by both the poison control center and the emergency department information systems.

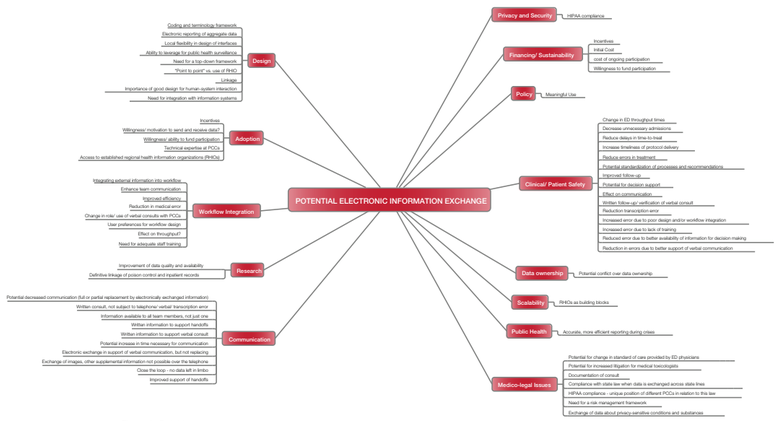

Figure 2. Delphi content areas

METHODS

Modified Delphi study, September-December 2010

Panel of N=71 national experts in emergency medicine, poison control, and informatics

Panelists rated statements with a 7-point Likert scale.

Content described in figure 2.

Statements that initially failed to reach consensus were presented to the panel a second time for rating, with mode(s) and comments from the previous round.

Thematic analysis used the Colaizzi approach.[4]

See Figure 3 for description of process.

STATISTICAL METHODS

We calculated response rate of panelists for each round. Analysis of panelist ratings included percent agreement (+/- 1 level), mean, median, and range, in addition to visualization of distributions to evaluate for skewness and bimodal distribution. Consensus criterion = 80%, +/- 1 level.

RESULTS

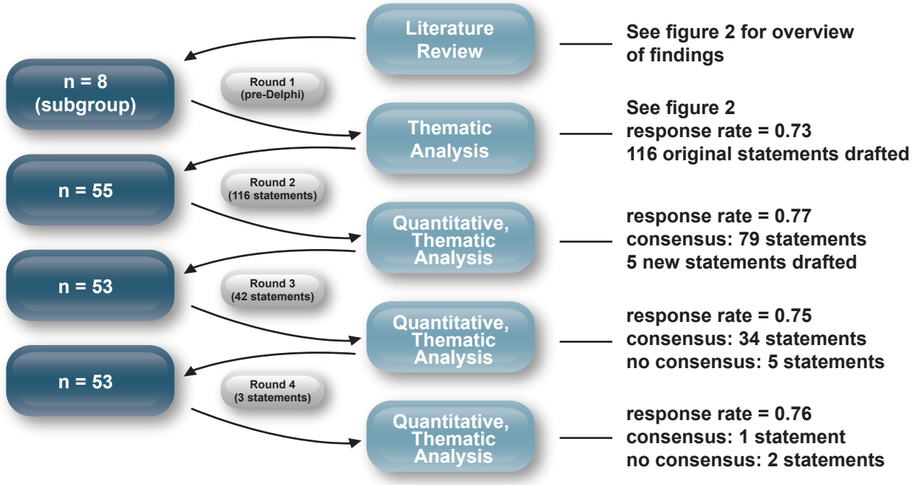

Figure 3. Study process and results summary

See figure 3.

Of 121 statements:

- 114 reached consensus
- 7 failed to reach consensus

Panelists agreed upon the importance of most outcomes, including the following:

- Effects on communication
- Information availability for decision making
- Medical error

Panelists agreed upon key aspects of adoption and implementation

Panelists favor systems that support but do not replace verbal communication and consultation.

CONCLUSIONS

LIMITATIONS

Many panelists contributed interesting, thought-provoking comments in the course of the study. According to Delphi process, the research team converted these comments to statements for rating by panelists. However, further qualitative analysis is necessary to fully describe these rich contributions.

Strategies to promote meaningful participation:

- Readily available study information and FAQs for panelists: http:www.tinyurl.com/poisondelphi
- Regular communication via electronic messaging
- Electronic reminder messages
- Immediate availability of principal investigator during data collection for assistance, questions, etc.
- Timely return of results to panelists

CONCLUSIONS

The response rate was high and stable, and consensus was evident.

Panelists agreed upon the importance of most outcomes, and favor systems that support but do not replace verbal communication.

Results of this study provide guidance for future research and development related to PCC-ED EIE, including information technology solutions, standards adoption or development, and policy.

FUTURE DIRECTIONS

This study is one part of a larger study funded by the Agency for Healthcare Research & Quality (AHRQ), and conducted by University of Utah investigators.

Other work (currently in progress) includes a requirements analysis for EIE between EDs and PCCs.

The requirements analysis, along with the results of this Delphi study, will provide concrete guidance for efficient research and development related to PCC-ED information exchange, including information technology solutions, standards adoption or development, and policy.

References:

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ACKNOWLEDGEMENT

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DISCLOSURE We have no financial interests or relationships to disclose.